Name:

p1105: Factoring when $a = 1$ (v16)

Example: Factor $x^2 + 5x - 24$

Find two numbers whose product is -24 and whose sum is 5. Focus on finding factor pairs of -24. Eventually you consider 8 and -3 because $(8)(-3) = -24$. You verify this pair is correct because $(8) + (-3) = 5$. Thus, your answer:

$$(x + 8)(x - 3)$$

1. Factor $x^2 - 4x - 32$

$$(x - 8)(x + 4)$$

2. Factor $x^2 - 17x + 72$

$$(x - 8)(x - 9)$$

3. Factor $x^2 + 13x + 40$

$$(x + 8)(x + 5)$$

4. Factor $x^2 - 3x - 54$

$$(x - 9)(x + 6)$$

5. Factor $x^2 - 2x - 63$

$$(x + 7)(x - 9)$$

6. Factor $x^2 + 4x - 45$

$$(x + 9)(x - 5)$$

7. Factor $x^2 + 6x - 27$

$$(x + 9)(x - 3)$$

8. Factor $x^2 - 12x + 35$

$(x - 7)(x - 5)$

9. Factor $x^2 + 5x + 4$

$(x + 4)(x + 1)$

10. Factor $x^2 + 12x + 35$

$(x + 7)(x + 5)$

11. Factor $x^2 - 11x + 18$

$(x - 9)(x - 2)$

12. Factor $x^2 + 7x + 12$

$(x + 4)(x + 3)$

13. Factor $x^2 + 10x + 16$

$(x + 2)(x + 8)$

14. Factor $x^2 - 7x - 18$

$(x - 9)(x + 2)$

15. Factor $x^2 - 2x - 48$

$(x - 8)(x + 6)$